CURRENT CLAIMS

Claim 1 (Previously Presented) A round cutting insert for train wheels with a ceramic film formed on a substrate wherein:

said substrate is formed from a hard phase and a binder phase, said hard phase being formed from WC and at least one metal compound selected from the group consisting of: a non-WC carbide, a nitride, and a carbonitride of a periodic table group 4a, 5a, 6a metal; and said binder phase being formed from at least one type of transition metal;

in said hard phase, a total volume of said metal compound has a proportion of 1.5 - 20% relative to a volume of said WC, and an average grain size of said WC is 1 - 5 microns;

said binder phase contains at least Co and a volume of said binder phase relative to a total volume of said substrate is 7 - 20%;

said substrate includes a ridge line of a cutting edge with a honed section, a base face and a breaker disposed on a rake face connected to said ridge line of said cutting edge, and an insert hole for securing to a holder;

round honing or combination honing is performed on said honed section and a nose radius is at least 1.6 mm;

said ceramic film includes an a-type aluminum oxide film, and at least one compound film selected from the group consisting of: a carbide, a nitride, an oxide, a carbonitride, an oxycarbide, a carbon oxynitride, a boron nitride, and a boron carbon oxynitride of a periodic table group 4a, 5a, 6a metal and an aluminum oxide;

said a-type aluminum oxide film has a thickness of 2 - 12 microns;

grains with grain sizes of 3 - 5 microns are present over 5 - 80% of the area of the a-type aluminum oxide film surface;

the over-all thickness of the ceramic film is 3 - 25 microns;

a ten-point average surface roughness Rz (5 microns reference length) of an inside of said honed section, a flank face side of said honed section, and a rake face side of said honed section is no more than 0.2 microns; and

a ten-point average surface roughness Rz (5 microns reference length) at an upper section of said breaker, said base face, and an area around said insert hole is no more than 0.5 microns.

Claim 2 (Previously Presented) A round cutting insert for train wheels according to claim 1 further comprising:

an outer layer of said ceramic film is formed from a titanium compound, with an outermost layer being formed from a titanium nitride;

said outer layer is at least partially removed from said ceramic film coating applied from said ridge line of a cutting edge to said base face and said upper surface of said breaker; and

said α-type aluminum oxide film is exposed from said section from which said outer layer is removed.

Claim 3 (Previously Presented) A round cutting insert for train wheels according to claim 1 wherein:

a surface of said substrate is formed with a tough layer with an average Vickers hardness (500 g load) that is less than an inside of said substrate by 0.3 - 1.5 GPa; and

said tough layer has a thickness along a depth axis of 2 - 50 microns.

Claim 4 (Previously Presented) A round cutting insert for train wheels as in claim 3 wherein:

combination honing is performed on said honed section; and

said tough layer is not formed on said inside of said honed section, and said tough layer is formed on said flank face side of said honed section.

Claim 5 (Previously Presented) A method for cutting wherein a workpiece is cut at a tool feed rate of at least 0.5 mm/rev. using a round cutting insert for train wheels as described in claim 1.